

Claims:

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1. A method of motion-compensated predictive image encoding, comprising the steps of:
- estimating (ME) first motion vectors (MVc, MVl, MVr, MVa, MVb) for first objects (16*16);
- 5 filtering (MVPF) said first motion vectors (MVc, MVl, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8*8), said second objects (8*8) being smaller than said first objects (16*16);
- generating (3) prediction errors in dependence on said second motion vectors (MV1, MV2, MV3, MV4); and
- 10 combining (VLC) said first motion vectors (MVc, MVl, MVr, MVa, MVb) and said prediction errors.
2. A method as claimed in claim 1, wherein said first objects (16*16) are macro-blocks, said second objects (8*8) are blocks, and said filtering step (MVPF) comprises the steps of:
- 15 providing x and y motion vector components of a given macro-block (MVc) and of macro-blocks (MVl, MVr, MVa, MVb) adjacent to said given macro-block (MVc); and
- supplying for each block (MV1) of a number of blocks (MV1-MV4) corresponding to said given macro-block (MVc), x and y motion vector components
- 20 respectively selected from said x and y motion vector components of said given macro-block (MVc) and from the x and y motion vector components of two blocks (MVl, MVa) adjacent to said block (MV1).

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3. A device for motion-compensated predictive image encoding, comprising:
means for estimating (ME) first motion vectors (MVc, MVl, MVr, MVa, MVb)
for first objects (16*16);

means for filtering (MVPF) said first motion vectors (MVc, MVl, MVr, MVa,
5 MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8*8),
said second objects (8*8) being smaller than said first objects (16*16);

means for generating (3) prediction errors in dependence on said second motion
vectors (MV1, MV2, MV3, MV4); and

means for combining (VLC) said first motion vectors (MVc, MVl, MVr, MVa,
10 MVb) and said prediction errors.

4. A method of motion-compensated predictive decoding, comprising the steps of:
generating (VLC⁻¹) first motion vectors (MVc, MVl, MVr, MVa, MVb) and
prediction errors from an input bit-stream, said first motion vectors (MVc, MVl, MVr,
15 MVa, MVb) relating to first objects (16*16);

filtering (MVPF) said first motion vectors (MVc, MVl, MVr, MVa, MVb) to
obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8*8), said
second objects (8*8) being smaller than said first objects (16*16); and

generating (15, MC) an output signal in dependence on said prediction errors
20 and said second motion vectors (MV1, MV2, MV3, MV4).

5. A method as claimed in claim 4, wherein said first objects (16*16) are macro-
blocks, said second objects (8*8) are blocks, and said filtering step (MVPF) comprises the
steps of:

25 providing x and y motion vector components of a given macro-block (MVc) and
of macro-blocks (MVl, MVr, MVa, MVb) adjacent to said given macro-block (MVc); and

supplying for each block (MV1) of a number of blocks (MV1-MV4)
corresponding to said given macro-block (MVc), x and y motion vector components
respectively selected from said x and y motion vector components of said given macro-block
30 (MVc) and from the x and y motion vector components of two blocks (MVl, MVa) adjacent
to said block (MV1).

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6. A device for motion-compensated predictive decoding, comprising:
means for generating (VLC⁻¹) first motion vectors (MVc, MVl, MVr, MVa, MVb) and prediction errors from an input bit-stream, said first motion vectors (MVc, MVl, MVr, MVa, MVb) relating to first objects (16*16);

5 means for filtering (MVPF) said first motion vectors (MVc, MVl, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects (8*8), said second objects (8*8) being smaller than said first objects (16*16); and

means for generating (15, MC) an output signal in dependence on said prediction errors and said second motion vectors (MV1, MV2, MV3, MV4).

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7. A multi-media apparatus, comprising:

means (T) for receiving a motion-compensated predictively encoded image signal; and

a motion-compensated predictive decoding device as claimed in claim 6 for generating a decoded image signal.

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8. An image signal display apparatus, comprising:

means (T) for receiving a motion-compensated predictively encoded image signal;

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a motion-compensated predictive decoding device as claimed in claim 6 for generating a decoded image signal; and

means (D) for displaying said decoded image signal.

9. A motion-compensated predictively encoded image signal, comprising:
motion vectors (MVc, MVl, MVr, MVa, MVb) relating to first objects (16*16); and

prediction errors relating to second objects (8*8), said second objects (8*8) being smaller than said first objects (16*16), wherein said prediction errors depend on motion vectors for said second objects (8*8).

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